4055

High-Mu Triode

CERAMIC-METAL PENCIL TUBE
FAST WARM-UP TIME WITH EXCELLENT THERMAL STABILITY

For Plate- or Grid-Pulsed Oscillator and Grid- or Cathode-Pulsed Amplifier Applications to 4000 Mc/s and for Frequency Multiplier Service to over 1000 Mc/s

ELECTRICAL

Heater, for Unipotential Cathode		
Voltage (AC or DC)	6.3 ± 10%	V
Current at heater volts = 6.3	0.295	A
Amplification Factor	70	
Transconductance, for dc plate mA = 40, dc plate volts = 150	35000	μmhos
Direct Interelectrode Capacitances[a]		
Grid to plate	1.9	pF
Grid to cathode	5.5	pF
Plate to cathode	0.07 max	pF

MECHANICAL

Operating Position . . . . Any
Weight . . . . 0.4 oz
Altitude (without pressurization, 3500 V dc applied between plate cylinder and grid flange) . . . . 25000 ft
Dimensions and Terminal Connections . . . . . See Accompanying *Dimensional Outline*
Socket for Heater Pins . . Grayhill No.22-3[b], Cinch 54A16325[c], or equivalent
Terminal Connections (See *Dimensional Outline*)

H – Heater
K – Cathode
G – Grid
P – Plate

THERMAL

Plate-Seal Temperature	225 max	°C

PLATE-PULSED SERVICE - Class C
Maximum Ratings, Absolute-Maximum Values

For a maximum "ON" time[d] of 50 microseconds in any 5000-microsecond interval

Peak Positive-Pulse Plate-Supply Voltage	3500	V
Peak Plate Current (from pulse supply)	3	A
DC Plate Current	40	mA
DC Grid Current	15	mA
Plate Dissipation	10	W
Pulse Duration	5	μs
Duty Factor	0.01	

Typical Operation

As Plate-Pulsed Oscillator with Rectangular Shape at 3300 Mc/s

With duty factor[f] of 0.001 and pulse duration[e] of 1 microsecond at a pulse repetition rate of 1000 pps

Peak Positive-Pulse Plate-Supply Voltage	1750	V
DC Plate Current	3	mA
DC Grid Current	1.4	mA
Grid Resistor	2000	Ω
Useful Power Output at Peak of Pulse	1300	W

GRID-PULSED OR CATHODE-PULSED SERVICE - Class C

Maximum Ratings, Absolute-Maximum Values

With duty factor of 0.01 and pulse width of 5 microseconds

Plate Supply Voltage	2000	V
Peak Plate Current	3	A
DC Grid Bias Voltage	-100 min	V
Peak Grid Current	1.5	A
Plate Dissipation	10	W

Typical Operation

As Grid-Pulsed Amplifier with Rectangular Shape at 1090 Mc/s

With pulse duration of 0.5 microsecond at a pulse repetition rate of 2000 pps

Plate Supply Voltage	1000	V
Peak Plate Current	1.5	A
DC Grid Bias Voltage	-30	V
Peak Driver Power	50	W
Peak Power Output	600	W

[a] With external shield.

[b] Grayhill, Inc., 561 Hillgrove Ave., LeGrange, Ill.

[c] Cinch Mfg. Co., 1026 South Homan Ave., Chicago, Ill.

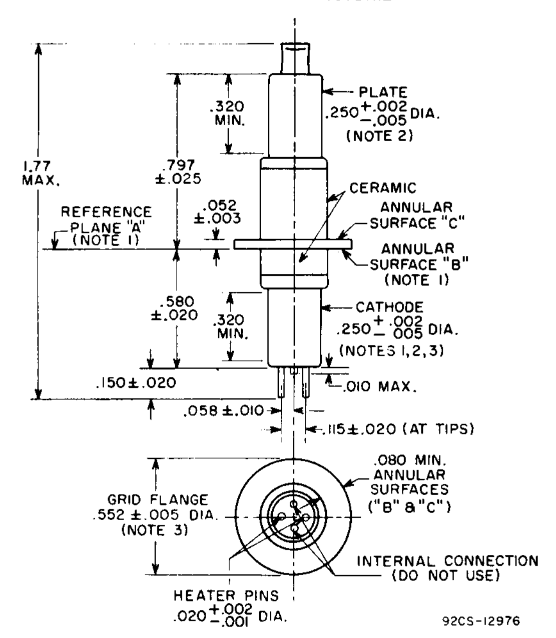
[d] "ON" time is defined as the sum of the duration of all individual pulses occurring during the indicated interval.

[e] Pulse Duration is defined as the time interval between the 2 points on the pulse at which the instantaneous value is 70% of the peak power value.

[f] Duty Factor is the product of pulse duration and repetition rate. For variable pulse durations and pulse repetition rates (pps), the duty factor is defined as the ratio of time "ON" to total elapsed time in any 5000-microsecond interval.

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DIMENSIONAL OUTLINE



DIMENSIONS IN INCHES

Reference Plane "A" is defined as that plane against which annular surface "B" of the grid flange abuts.

Annular Surface "B" is on the side of the grid flange toward the cathode cylinder.

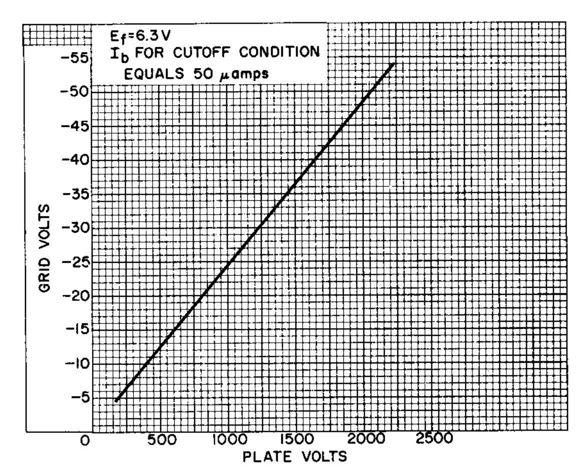
Annular Surface "C" is on the side of the grid flange toward the plate cylinder.

Note 1: With annular surface "B" resting on reference plane "A", the axis of the cathode cylinder will be within 2° of a line perpendicular to reference plane "A".

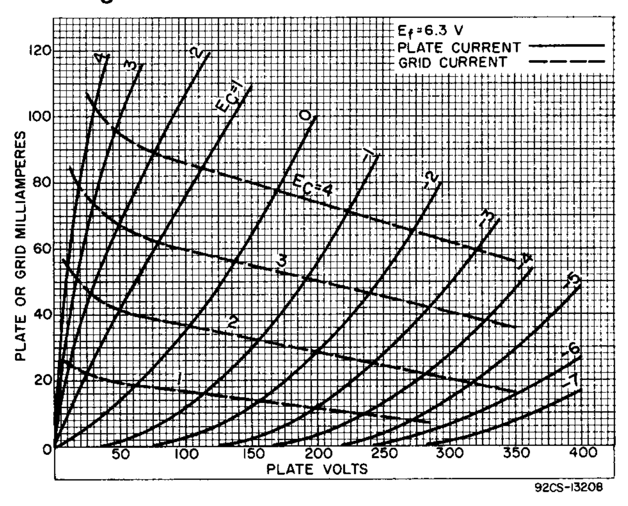
Note 2: The axes of the plate cylinder and cathode cylinder will coincide within 0.010 inch.

Note 3: The axes of the cathode cylinder and grid flange will coincide within 0.010 inch.

Plate-Current Cutoff Characteristic



Average Characteristics in Cathode-Drive Service



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Average Constant-Current Characteristics in Cathode-Drive Service

